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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
YEE, DEBORAH	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/724,641	DIERICKX ET AL.	
	Examiner	Art Unit	
	Deborah Yee	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 5 to 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 5 to 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 5 to 10, 12,13 and 16 to 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al (US Patent 6,588,483) for the reasons set forth in the office action dated 6-30-05.

3. Claims 1 and 5 to 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 2001-152246 for the reasons set forth in the office action dated 6-30-05.

Response to Arguments

4. Applicant's arguments filed 9-30-05 have been fully considered but they are not persuasive.

5. Applicant traversed the 103 rejection based on Nakamura. It was argued that prior art does not disclose a method of fabricating a steel part containing 5 to 50ppm of B and 0.005 to 0.04%Ti wherein the Ti content is equal to at least 3.5 times the N content of the steel. It is the examiner's position that Nakamura on lines 35 to 47 of column 4 discloses 0.004 to 0.03%Ti and not more than 0.006% N, and line 29 in

column 5 discloses 5 to 20 PPM B which overlap the respective Ti, N and B ranges recited by the claims; and hence establishes a prima facie case of obviousness. Moreover, specific examples 11 to 32 in Table 1 of columns 11-12 contain Ti and N in amounts that meet the claimed ranges and when calculated, satisfy the claimed Ti:N ratio.

6. It was submitted that Nakamura does not teach the cooling rate recited by the claims. It is the examiner's position that Nakamura on lines 39 to 49 in column 6 discloses cooling at 1 to 50C/sec after completion of hot rolling which encompasses applicant's rate of controlled cooling in still air or forced air as recited by claim 1 and less than or equal to 3C/sec as recited by claim 18. Moreover, Nakamura discloses specific examples in Table 1 of columns 11-12 and Table 3 of columns 15-16 which are subjected to either air cooling in still air (within applicant's claim 1 range) or cooling at low rates ranging from 3.6 to 3.8 (closely approximates applicant's range of no more than 3C/sec as recited by claim 18). Moreover, since applicant has not established criticality for the cooling rate of no more than 3C/sec (e.g. by comparative test data), then claims would not patentably distinguish over prior art.

7. It argued that Nakamura teaches hot rolling rather than forging recited by claim 17. It is the examiner's position that although hot forging recited by claim 17 is not taught by prior art, such would not be a patentable difference since it would be a matter of choice well within the skill of the artisan to substitute hot forging with hot rolling since they are both well known techniques in the metallurgical art for hot deforming and

shaping steel, and thus can be used interchangeably depending on the desired steel shape sought.

8. It was argued that P, S, N and Se in prior art are strictly limited so that toughness is not diminished whereas applicant's claims allow a much large amount of S and Se. Moreover, it was submitted that prior art strictly limits the amount of Si to no more than 0.4% whereas present invention tolerates up to 3%. It is the examiner's position that prior art on lines 1 to 10 in column 5 discloses S up to 0.01% and up to 0.005%Se and lines 50 to 62 in column 4 discloses 0.01 to 0.4%Si which overlap with claimed ranges of 0.005 to 0.2%S, up to 0.05%Se and up to 3%Si, respectively. Hence prior art alloy would still closely suggest the present invention.

9. It was submitted that Nakmaura steel teaches tensile strength (TS) examples at 470 to 850MPA whereas present invention can be as high as 1300MPA. It is the examiner' s position that some of the prior art specific examples in Table 3 of column 15-16 have TS values ranging from 856 to 860MPA which are within the claimed TS range of 750 o 1300MPA recited by applicant's claim 20. Hence claims would not patentably distinguish over prior art.

10. Applicant traversed the 103 rejection based on JP'246. It was argued that JP'246 alloy contains up to 0.6% Ti and JP'246 examples contain Ti amounts larger than permitted by the present invention. It is the examiner's position that JP'246 teaches up to 0.6% Ti which overlaps with applicant's range of 0.005 to 0.04%. Moreover, since applicant has not demonstrated (e.g. by comparative test data), that the claimed Ti range is somehow critical and productive of new and unexpected, then

claims would not patentably distinguish over prior art. Note that applicant's original claim 1 did not require the presence of Ti, and also his specification on pages 10 and 11 discloses present invention examples 1 and 2 which do not require the presence of Ti. Hence based on applicant's specification, the presence of 0.005 to 0.04% Ti appears to optional and productive of no new and unexpected results.

11. It was argued that JP'246 does not teach hot deformation performed at 1100C to 1300 as required by applicant's claim 1, and there is no evidence to support the conclusion that such temperature would be expected in JP'246 process. It is the examiner's position that since JP'246 teaches cooling after hot deforming at 900C, then it would be logical to assume that hot deforming was performed at a temperature greater than 900C since the finishing temperature for deforming is at 900C. Hence prior art hot deforming temperature of greater than 900C would closely approximate applicant's claimed hot deforming temperature range of 1100 to 1300C and therefore closely suggest the present invention.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Deborah Yee
Primary Examiner
Art Unit 1742

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